

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-18. (cancelled)

19. (new) A reductant delivery system, comprising:

an evaporator unit including at least a heating element;
a mixing device having at least one inlet and at least one outlet coupled to said evaporator unit; and
a controller for introducing reductant and air into said mixing device through said inlet, mixing said reductant and air, injecting said mixture of said reductant and said air through said outlet having an outlet area smaller than said mixing unit into said evaporator unit thereby causing evaporation of said reductant and air mixture, the reductant delivery system protruding into an exhaust gas flow of an internal combustion piston engine of a mobile vehicle.

20. (new) The system as set forth in Claim 1 wherein said reductant is hydrocarbon.

21. (new) A method for vaporizing a substance in a reductant delivery system for an exhaust gas aftertreatment device, the system having at least a heating element, the method comprising:

generating a mixture by mixing a predetermined amount of reductant with a predetermined amount of air, the reductant including hydrocarbon; and
injecting said mixture into the reductant delivery system thereby causing said mixture to vaporize, the reductant delivery system protruding into an exhaust gas flow of an internal combustion piston engine of a mobile vehicle upstream of said exhaust gas aftertreatment device.

22. (new) The method as set forth in Claim 21 wherein said reductant is hydrocarbon.

23. (new) The method as set forth in Claim 21 wherein the exhaust gas aftertreatment device is an Active Lean NOx Catalyst (ALNC).

24. (new) The method as set forth in Claim 12 further comprising directing said vaporized mixture into said ALNC.

25. (new) A method for controlling a reductant delivery system having at least a heating element, the system coupled upstream of an exhaust gas aftertreatment device of an internal combustion piston engine in a mobile vehicle, the method comprising:

injecting air into the system;
vaporized mixture, said reductant including hydrocarbons; and
directing said vaporized mixture into the exhaust gas aftertreatment device via said reductant delivery system, said reductant delivery system protruding into an exhaust gas stream from said internal combustion piston engine.

26. (new) The method as set forth in Claim 25 wherein said reductant is hydrocarbon.

27. (new) The method as said forth in Claim 25 wherein the engine is a diesel engine.

28. (new) The method as set forth in Claim 25 wherein the exhaust gas aftertreatment device is an ALNC.

29. (new) A reductant delivery system, comprising:
an evaporator unit including at least a heating element;
a mixing device having at least one inlet and at least one outlet, coupled to said evaporator unit;
a controller for introducing reductant and air into said mixing device through said inlet, and injecting a mixture of said reductant and said air through said outlet into said evaporator unit thereby causing evaporation of said reductant and air mixture, wherein said reductant and air mixture contacts a surface of said heating element, and where said evaporated reduct and air enters exhaust gas of an internal combustion engine.